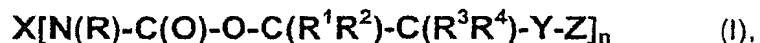


What is claimed is:

1. A compound which can be activated by actinic radiation, contains at least one urethane group and has  
5 the general formula I:



10 in which the index and the variables have the following meanings:

n is an integer from 1 to 5;

X is an at least n-valent, substituted or unsubstituted organic radical;

R is a hydrogen atom or a monovalent substituted or unsubstituted organic radical;

R<sup>1</sup> - R<sup>4</sup> independently of one another are a hydrogen atom, halogen atom or monovalent, substituted or unsubstituted organic radical, it being possible for at least two radicals to be cyclically linked to one another;

Y is a divalent, linking functional group containing at least one oxygen atom; and

Z is an organic radical containing at least one group which can be activated by actinic radiation;

with the proviso that at least for  $n = 1$  the radical R and/or the radical X are/is substituted by at least one substituent of the general formula II:

5



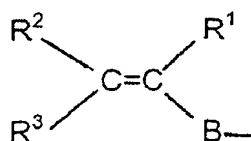
in which the variables Z and Y are as defined above.

10 2. The compound as claimed in claim 1, wherein  $n = 1$  or 2.

3. The compound as claimed in claim 1 or 2, wherein the bond which can be activated by actinic radiation in  
15 the radicals Z is a carbon-carbon double bond (double bond).

4. The compound as claimed in claim 3, wherein the radicals Z have the general formula III:

20



(III),

in which the variables  $R^1$ ,  $R^2$ , and  $R^3$  are as defined above and the variable -B- is a single bond between the carbon atom of the double bond and the divalent linking functional group Y or is a divalent substituted or  
5 unsubstituted linking organic radical X.

5. The compound as claimed in claim 4, wherein the radicals Z are vinyl radicals.

10 6. The compound as claimed in any of claims 1 to 5, wherein the divalent linking functional groups Y are selected from the group consisting of ether, carboxylate, carbonate, phosphate, phosphonate, phosphite ester, and sulfonate groups.

15

7. The compound as claimed in claim 6, wherein the divalent linking functional groups Y are carboxylate groups.

20 8. The process for preparing compounds which can be activated by actinic radiation and have the general formula I, as claimed in any of claims 1 to 7, which comprises reacting

25 (1) at least one compound which contains at least one urethane group and has the general formula IV:



in which the index  $n$  and the variables  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  are as defined above and the variable  $X^1$  is an  $n$ -valent and the variable  $R^5$  a monovalent, hydroxyl-containing or hydroxyl-free substituted (substituents of the general II being excluded) or unsubstituted, organic radical; with the proviso that at least for  $n = 1$  the radical  $X^1$  and/or radical  $R^5$  contain/contains one hydroxyl group; with

(2) at least one compound of the general formula V:



in which the variable  $Z$  is as defined above and the variable  $Y^1$  is a reactive functional group which forms at least one group  $Y$  with the hydroxyl group or groups of the compounds of the general formula IV;

in a  $Y^1 : OH$  equivalents ratio  $\geq 1.0$ .

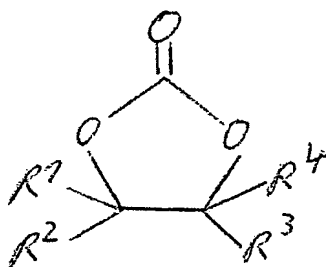
9. The process as claimed in claim 8, wherein the reactive functional group  $Y^1$  is selected from the group consisting of halogen atoms, carboxylic acid, sulfonic acid, phosphoric acid, phosphonic acid, and phosphorous acid groups; carbonyl halide, sulfonic halide,

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phosphoric halide, phosphoryl halide groups; carboxylic anhydride, sulfonic anhydride, phosphoric anhydride, phosphonic anhydride, and phosphoryl anhydride groups; carboxylic, sulfonate, phosphate, phosphonate, and phosphite groups; and also epoxide, N-methylol, and N-methylol ether groups.

10. The process as claimed in claim 8 or 9, wherein the compound of the general formula VI is prepared by reacting

(1) at least one 1,3-dioxolan-2-one of the general formula VI:



(VI),

in which the variables  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are as defined above; with

(2) at least one compound which contains at least one primary and/or secondary amino group and has the general formula VII:



in which the index and the variables  $X^1$  and  $R^5$  are as defined above,

in an amino group : carbonate group equivalents  
5 ratio = 0.8 to 1.2.

11. Use of the compounds of the general formula I as claimed in any of claims 1 to 7 and of the compounds in the general formula I prepared by the process as  
10 claimed in any of claims 8 to 10 as compositions curable by actinic radiation or for preparing compositions curable by actinic radiation or both thermally and by actinic radiation.

15 12. The use as claimed in claim 11, wherein the curable compositions are used as coating materials, adhesives or sealants for producing coatings, paint systems, adhesive films, and seals and also for producing moldings and self-supporting films.